



HRV – HEAT RECLAIM VENTILATION

FXMQ-MFV1 – OUTDOOR AIR PROCESSING UNIT

VRV® +EXV-KIT – VRV® AIR HANDLING APPLICATIONS

VENTILATION SYSTEMS

**R-410A**



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A WIDE VARIETY OF DAIKIN SOLUTIONS  
FOR THE PROVISION OF FRESH AIR AND VENTILATION

# DAIKIN EUROPE NV



Daikin has a worldwide reputation based on over 80 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use.

Daikin Europe N.V.

## ENVIRONMENTAL AWARENESS

### Enhancing the present - safeguarding the future

Throughout the last 50 years or so the basic building blocks of life - air, water and the earth - have been systematically subjected to increasing levels of pollution with little regard to their potentially devastating effects on future generations.

Recently however, concern has grown regarding climate changes, acid rain, water and air pollution and the constant degradation of Earth's natural resources. The very technology that created these problems is now being harnessed to halt and reverse them. Depletion of the ozone layer and global warming have been highlighted and are now being addressed. Government legislation prohibiting the use of toxic substances and the generation of pollutants has slowed down the destruction of the environment.

Daikin Europe is proud to have been pro active in this respect, closely following its Japanese parent in implementing policies that have often pre-empted official legislative codes and directives. As a result, a culture of "environmental management" has since 2001, played a key role in the company's day to day activities and development strategies.

Top management commitment is reflected in the establishment of a number of action plans, which are now strictly observed and implemented throughout the Daikin Group.



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# HRV - HEAT RECLAIM VENTILATION

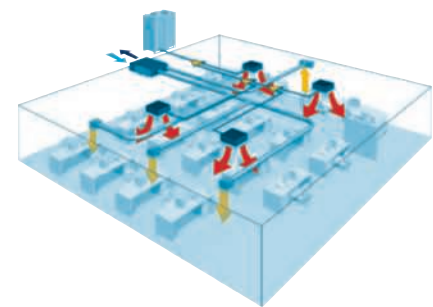
## GENERAL (VAM+VKM) FEATURES

### HRV helps create a high quality environment by interlocking with the air conditioning system

The Daikin HRV (Heat Reclaim Ventilation) recovers heat energy lost through ventilation and holds down room temperature changes caused by ventilation, thereby maintaining a comfortable and clean environment. This also reduces the load on the air conditioning system and conserves energy.

In addition, the HRV interlocks with Daikin's VRV® system, Sky Air and other air conditioning systems and automatically switches over ventilation mode, further increasing the effects of energy conservation. HRV operation has been centralised on the air conditioner remote control allowing total control over air conditioning and ventilation via a simple configuration.

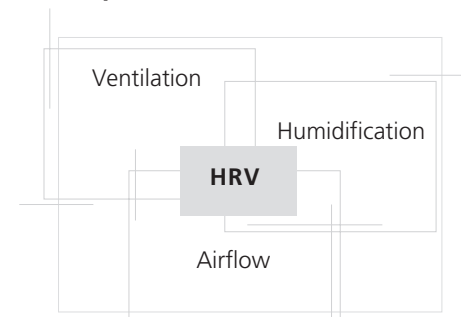
The current line-up includes models with DX coil and/or humidifier - the DX coil helps prevent the direct impact of cold airflow upon personnel during the heating cycle and vice versa. High static pressure enhances design flexibility.



### Features of the VKM unit

- › Humidifier
- › DX coil
- › High static pressure

### Components of Indoor Air Quality



### LINE-UP

Air flow rate (m³/h)	150	250	350	500	650	800	1000	1500	2000
VAM-FA Ventilation	X	X	X	X	X	X	X	X	X
VKM-GAM: Ventilation, DX coil & humidifier				X		X	X		
VKM-GA: Ventilation & DX coil				X		X	X		





## 1. ENERGY EFFICIENCY

### › Over 30 % Size Reduction

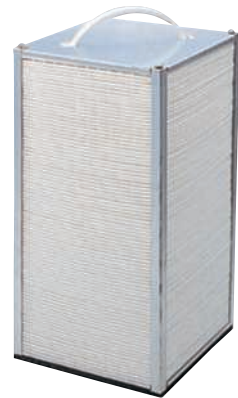
Use of the high efficiency paper (HEP) element and optimized design of the fan and airflow passages have resulted in matchless compactness without detriment to the 28% or so reduction in air conditioning load achieved by previous models. A reduction of up to 40mm in height allows the main unit to fit easily into limited spaces such as ceilings. On average 28 % air conditioning load reduction (maximum 40 %):

- 20% by operating in total heat exchange mode (in comparison with normal ventilation fans)
- a further 6 % by auto-ventilation mode changeover switching
- a further 2 % by pre-cool, pre-heat control (reduces air conditioning load by not running the HRV while air is still clean soon after the air conditioner is switched on.)

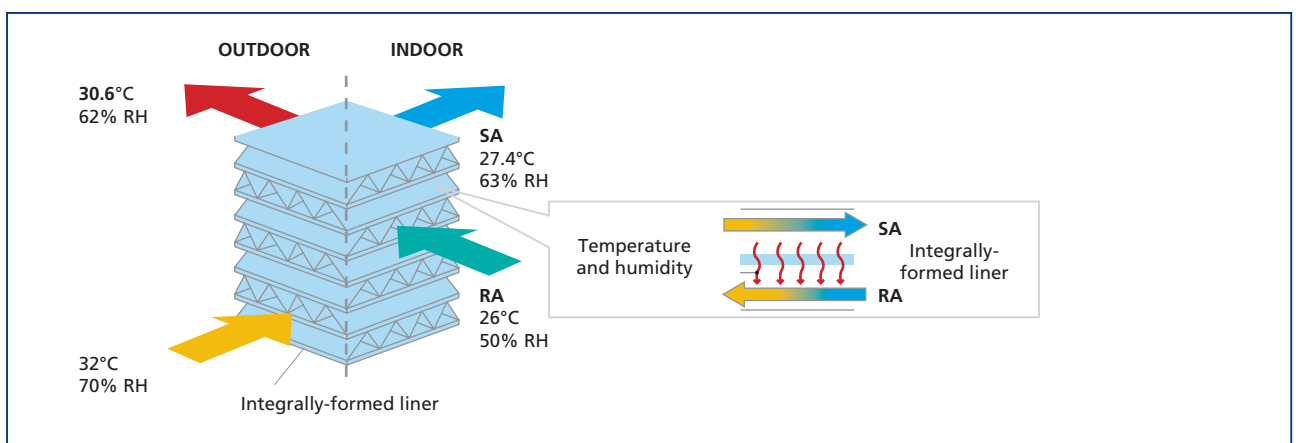
Note: the values mentioned above may vary according to weather and other environmental conditions at the location of the unit's installation

### › Proprietary Developed HEP Element

The heat exchange element uses a high efficiency paper (HEP) possessing superior moisture absorption and humidifying properties. The heat exchange unit speedily recovers heat contained in latent heat (vapour). The element is made of a material with flame resistant properties and is treated with an anti-moulding agent.

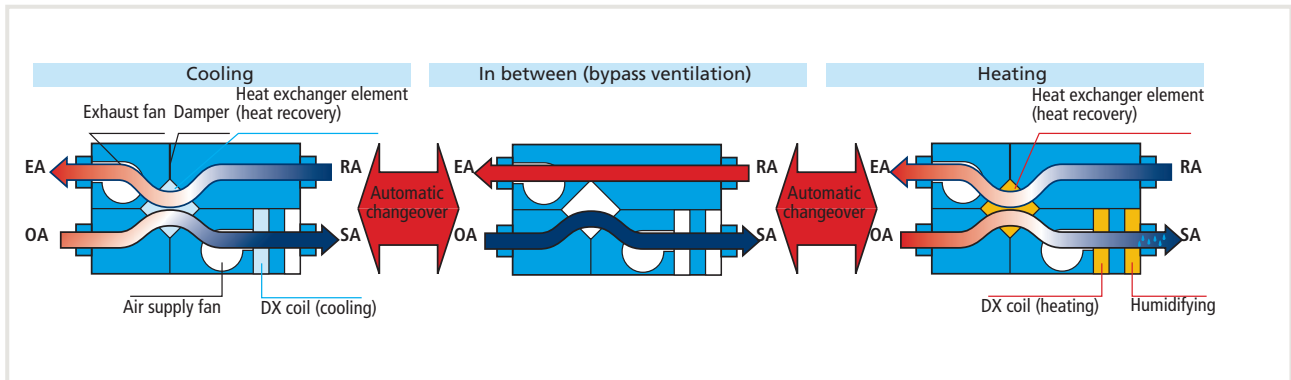


### › Operation of the heat exchanger element



## › Automatic Changeover to Efficient Operation Patterns

Operation automatically switches to the optimum pattern to suit prevailing conditions



## 2. DESIGN FLEXIBILITY

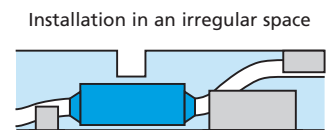
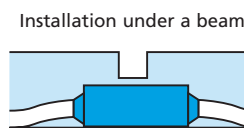
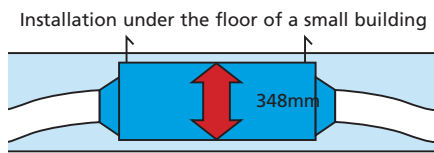
### › Outdoor Operation Temperature down to -15°C

If the outdoor air suction temperature falls below -10°C, the unit switches to intermittent operation to prevent freezing of the heat exchanger element and dew condensation within the unit.

Intermittent operation = a thermistor (standard equipment) within the unit detects the outdoor air temperature. Unit operation varies according to the detected temperature.

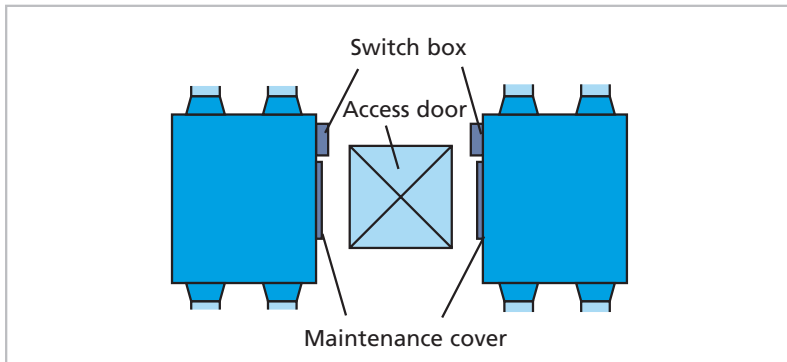
### › Slim Design

The slim design of the HRV unit enables it to be mounted in narrow ceiling voids and irregularly shaped spaces.



### › Simple Design and Construction

The unit can be installed either horizontally or upside down in accordance with the conditions of the location. A 450mm square inspection hatch enables maintenance and heat exchange element replacement to be performed with ease.

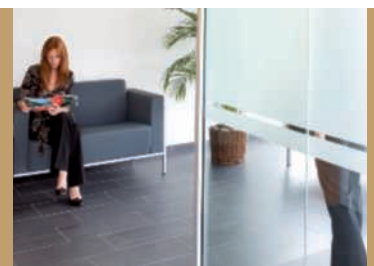


### › Quiet Operation

Sound pressure levels are remarkable low at 20.5dBA (VAM150FA)

dB(A)	Perceived loudness	Sound
0	Threshold of hearing	-
20	Extremely soft	Rustling leaves
40	Very soft	Quiet room
60	Moderately loud	Normal conversation
80	Very loud	City traffic noise
100	Extremely loud	Symphonic orchestra
120	Threshold of feeling	Jet taking off

Daikin units

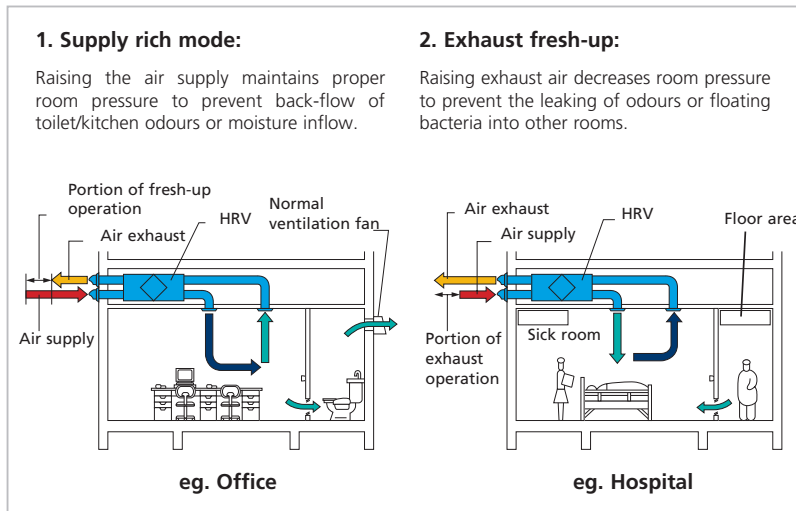




### 3. CLEAN AIR

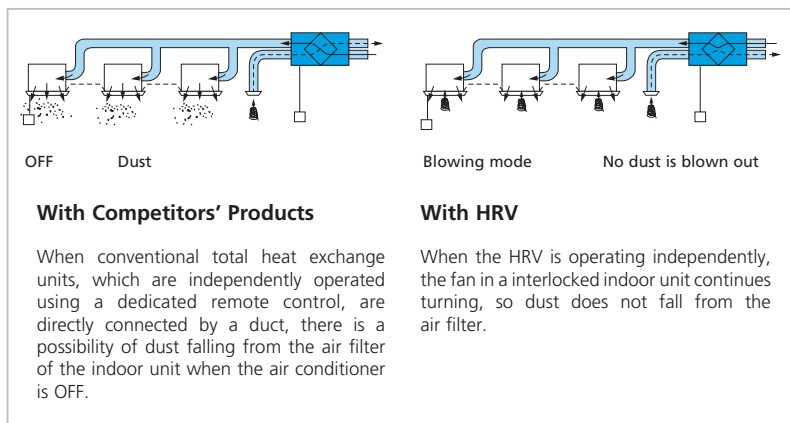
#### › Fresh-Up Operation

The user can select between 2 fresh-up modes via the remote control.



#### › Dust Prevention

Prevents dust from falling thanks to directly mounted ducts.

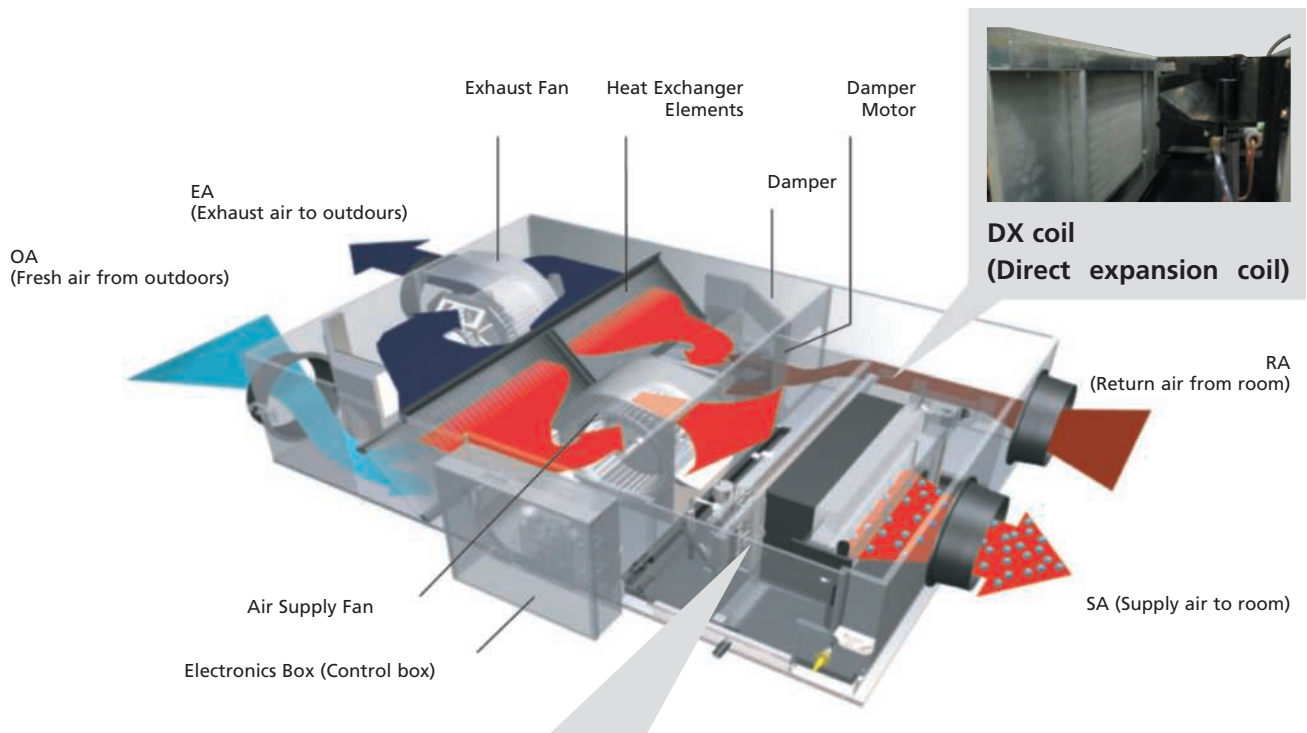


#### › Filter Cleaning

A signal on the remote control indicates when the air filter needs cleaning.

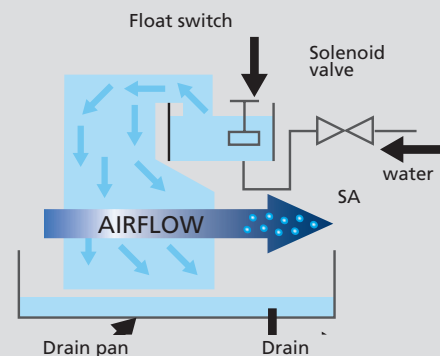


# VKM FEATURES



## Humidifier element:

Utilizing the principle of capillary action, water is permeated throughout the humidifier element. The heated air from the DX coil passes through the humidifier and absorbs the moisture.

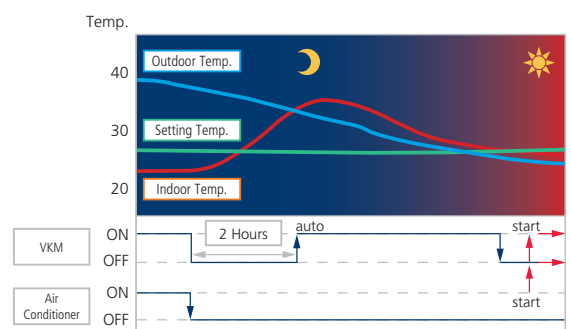


## 1. ENERGY EFFICIENCY

### › Nighttime Free Cooling Operation

Nighttime free Cooling Operation is an energy conserving function operating at night when the air conditioning is switched off. By ventilating rooms containing office equipment that increases room temperature, night purge reduces the cooling load when air conditioning is switched on in the morning.

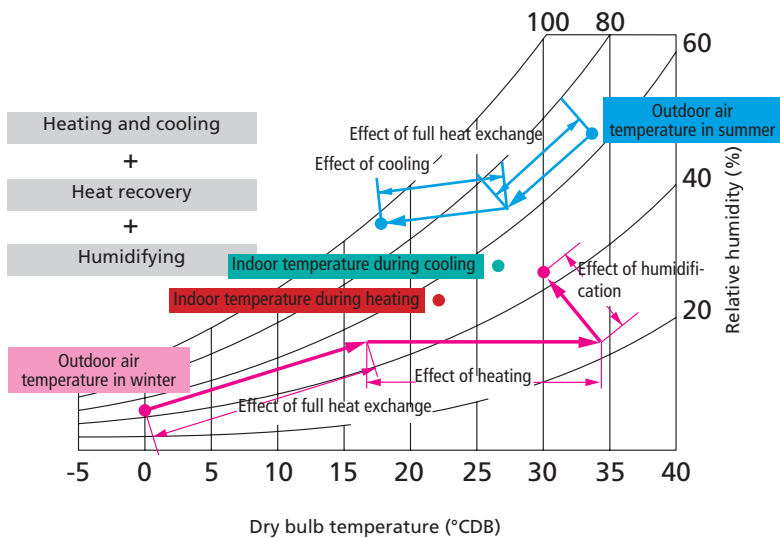
- › Nighttime free cooling operation works only if connected to Multi or VRV® systems.
- › Nighttime free cooling operation is factory set to "off" but can be activated by your Daikin dealer on request.



## › Efficient Outdoor Air Introduction with Heat Exchanger and Cooling/Heating Operation

Indoor unit with outdoor air treatment.

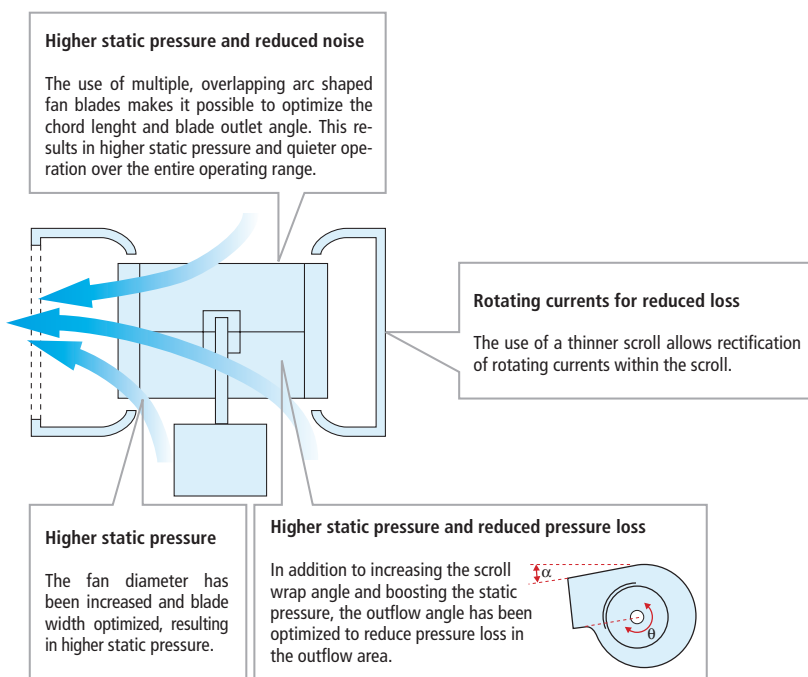
The temperature can be brought close to room temperature with minimal cooling capacity through the use of outdoor air.



## 2. DESIGN FLEXIBILITY

### › High Static Pressure

Modifications to the fan, including the use of multiple arc blades, a thinner scroll and optimized fan scroll angle, help to boost efficiency. Dramatically higher static pressure is achieved due to improved fan performance. This reduces limitations on unit location and allows more flexibility in duct design.



### › Indoor Unit Connectability

The indoor unit is connectable up to 130% of outdoor unit capacity.



# SPECIFICATIONS

## VAM-FA8

Ventilation



VAM800FA

VAM-FA			150	250	350	500	650	800	1000	1500	2000
Temperature exchange efficiency (%)			ultra-high	74	72	75	74	74	74	75	75
			high	74	72	75	74	74	74	75	75
			low	79	77	80	77	77	76	76.5	78
Enthalpy exchange efficiency (%)	for heating	ultra-high	64	64	65	62	63	65	66	66	66
		high	64	64	65	62	63	65	66	66	
		low	69	68	70	67	66	67	68	68	
	for cooling	ultra-high	58	58	61	58	58	60	61	61	61
		high	58	58	61	58	58	60	61	61	
		low	64	62	67	63	63	62	63	64	
Power supply			VE1 ~, 220~240V, 50Hz								
Sound pressure level dB(A)	heat exchange mode	ultra-high	27-28.5	28-29	32-34	33-34.5	34.5-35.5	36-37	36-37	39.5-41.5	40-42.5
		high	26-27.5	26-27	31.5-33	31.5-33	33-34	34.5-36	35-36	38-39	
		low	20.5-21.5	21-22	23.5-26	24.5-26.5	27-28	31-32	31-32	34-36	
	bypass mode	ultra-high	27-28.5	28-29	32-34	33.5-34.5	34.5-35.5	36-37	36-37	40.5-41.5	40-42.5
		high	26.5-27.5	27-28	31-32.5	32.5-33.5	34-35	34.5-36	35.5-36	38-39	
		low	20.5-21.5	21-22	24.5-26.5	25.5-27.5	27-28.5	31-33	31-32	33.5-36	
Casing			Galvanised steel plate								
Insulation material			Self-extinguishable urethane foam								
Dimensions	H x W x D	mm	269 x 760 x 509		285 x 812 x 800		348 x 988 x 852		348x988x1,140	710x1,498x852	10x1,498x1,140
Weight		kg	24		33		48		61	132	158
Heat exchange system			Air to air cross flow total heat (sensible heat + latent heat) exchange								
Heat exchange element material			Specially processed non-flammable paper								
Air filter			Multidirectional fibrous fleeces								
Fan	type		Sirroco fan								
	air flow rate (m³/h)	ultra-high	150	250	350	500	650	800	1,000	1,500	2,000
		high	150	250	350	500	650	800	1,000	1,500	
		low	110	155	230	350	500	670	870	1,200	
	external static pressure (Pa)	ultra-high	69	64	98	98	93	137	157	137	
		high	39	39	70	54	39	98	98	98	
		low	20	20	25	25	25	49	78	49	
Motor output			kW	0.030 x 20.090 x 2		0.140 x 2		0.230 x 2		0.230 x 4	
Connection duct diameter			mm	Ø 100		Ø 150		Ø 200		Ø 250	
Unit ambient condition			-15°C ~ +50°CDB, 80% RH or less								

### Notes:

- > Air flow rate can be changed over to low mode or high mode.
- > Sound pressure level is measured at 1.5m below the center of the body.
- > Sound pressure level is measured in an anechoic chamber.
- > Sound pressure levels generally become higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- > The sound pressure level at the air discharge port is about 8dB higher than the unit's sound level.
- > Even when the outdoor temperature is below -15°C, the system is operable down to -20°C with the preheater installed at the outdoor air intake side.



# VKM-GAM

Ventilation, DX coil & humidifier



V K M 8 0 - 1 0 0 G A M

					VKM50GAM	VKM80GAM	VKM100GAM
DX coil capacity	cooling		kW		4.71	7.46	9.12
	heating		kW		5.58	8.79	10.69
Casing	material				Galvanised steel plate		
Dimensions	height		mm		387	387	387
	width		mm		1,764	1,764	1,764
	depth		mm		832	1,214	1,214
Weight			kg		102	120	125
Fan	type				Sirocco fan		
	air flow rate	heat exchange mode	ultra-high	m³/h	500	750	950
			high	m³/h	500	750	950
			low	m³/h	440	640	820
		bypass mode	ultra-high	m³/h	500	750	950
			high	m³/h	500	750	950
			low	m³/h	440	640	820
	external static pressure		ultra-high	Pa	160	140	110
			high	Pa	120	90	70
			low	Pa	100	70	60
	motor	output		W	2 x 280	2 x 280	2 x 280
Temperature exchange efficiency			ultra-high	%	76	78	74
			high	%	76	78	74
			low	%	77.5	79	76.5
Enthalpy exchange efficiency	cooling	ultra-high	%	64	66	62	
		high	%	64	66	62	
		low	%	67	68	66	
	heating	ultra-high	%	67	71	65	
		high	%	67	71	65	
		low	%	69	73	69	
Humidifier	system				Natural evaporating type		
	amount		kg/h		2.7	4.0	5.4
	feed water pressure		MPa		0.02~0.49	0.02~0.49	0.02~0.49
	N° of elements				1	1	2
Operation range	around unit				0°C~40°CDB, 80% RH or less		
	outdoor air				-15°C~40°CDB, 80% RH or less		
	return air				0°C~40°CDB, 80% RH or less		
Sound level - 230V	heat exchange mode	sound pressure	ultra-high	dBA	37.5	39	39.5
			high	dBA	35.5	37	37.5
			low	dBA	33	34	34.5
	bypass mode	sound pressure	ultra-high	dBA	37.5	39	39.5
			high	dBA	35.5	37	37.5
			low	dBA	33	34	34.5
Piping connection	liquid	type		flare connection		flare connection	flare connection
		diameter		mm		6.4	6.4
	gas	type		flare connection		flare connection	flare connection
		diameter		mm		12.7	12.7
	water supply		mm		6.4	6.4	6.4
	drain				PT3/4 external thread		
Insulation material					Self-extinguishable urethane foam		
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange		
Heat exchange element					Specially processed non-flammable paper		
Air filter					Multidirectional fibrous fleeces		
Connection duct diameter				mm	Ø 200	Ø 250	Ø 250
Power supply				V1	1~, 50Hz, 220-240V		

## Notes:

- › Indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB Indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB
- › Humidifying capacity is based on: Indoor temperature: 20°CDB, 15°CWB, outdoor temperature: 7°CDB, 6°CWB
- › Operation sound is measured at 1.5m below the center of the body.
- › Sound values are measured in an anechoic chamber built in accordance with JIS C 1502 condition. Operating sound level generally becomes higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- › The sound level at the air discharge port is about 8dB higher than the unit's operating sound.
- › For operation in a quiet room, it is required to take measures to lower the sound, for example install more than 2m soft duct near the air discharge grill.
- › Air flow rate can be changed over to Low mode or High mode.
- › Normal amplitude, input, efficiency depend on the other above conditions

# VKM-GA

Ventilation & DX coil



V K M 8 0 - 1 0 0 G A

					VKM50GA	VKM80GA	VKM100GA
DX coil capacity	cooling			kw	4.71	7.46	9.12
	heating			kW	5.58	8.79	10.69
Casing	material				Galvanised steel plate		
Dimensions	height			mm	387	387	387
	width			mm	1,764	1,764	1,764
	depth			mm	832	1,214	1,214
Weight				kg	96	109	114
Fan	type				Sirocco fan		
	air flow rate	heat exchange mode	ultra-high	m³/h	500	750	950
			high	m³/h	500	750	950
			low	m³/h	440	640	820
		bypass mode	ultra-high	m³/h	500	750	950
			high	m³/h	500	750	950
			low	m³/h	440	640	820
	external static pressure		ultra-high	pa	180	170	150
			high	pa	150	120	100
			low	pa	110	80	70
	motor	output			W	2 x 280	2 x 280
Temperature exchange efficiency			ultra-high	%	76	78	74
			high	%	76	78	74
			low	%	77.5	79	76.5
Enthalpy exchange efficiency	cooling		ultra-high	%	64	66	62
			high	%	64	66	62
			low	%	67	68	66
	heating		ultra-high	%	67	71	65
			high	%	67	71	65
			low	%	69	73	69
Operation range	around unit				0°C~40°CDB, 80% RH or less		
	outdoor air				-15°C~40°CDB, 80% RH or less		
	return air				0°C~40°CDB, 80% RH or less		
Sound level - 230V	heat exchange mode	sound pressure	ultra-high	dBA	38.5	41	40.5
			high	dBA	36.5	38	38.5
			low	dBA	34.5	36	36
	bypass mode	sound pressure	ultra-high	dBA	38.5	41	40.5
			high	dBA	36.5	38	38.5
			low	dBA	34.5	36	36
Piping connection	liquid	type		flare connection	flare connection	flare connection	
		diameter		mm	6.4	6.4	6.4
	gas	type		flare connection	flare connection	flare connection	
		diameter		mm	12.7	12.7	12.7
drain					PT3/4 external thread		
Insulation material					Self-extinguishable urethane foam		
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange		
Heat exchange element					Specially processed non-flammable paper		
Air filter					Multidirectional fibrous fleeces		
Connection duct diameter				mm	Ø 200	Ø 250	Ø 250
Power supply				V1	1~, 50Hz, 220-240V		

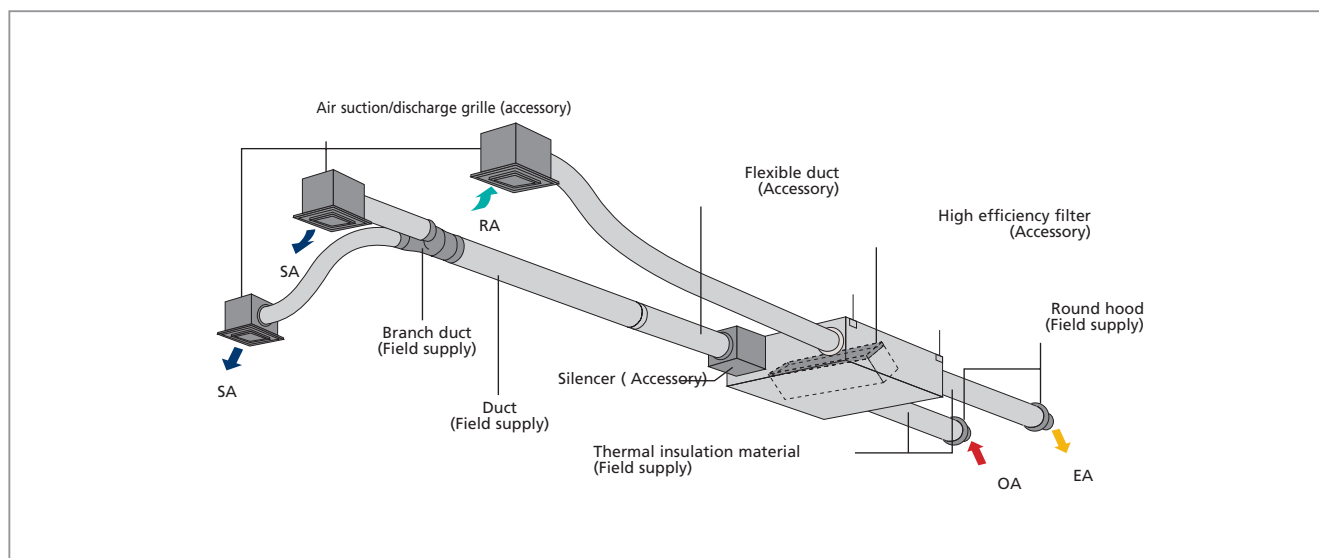
## Notes:

- > Cooling: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB
- > Heating: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB
- > Operation sound is measured at 1.5m below the center of the body.
- > Sound values are measured in an anechoic chamber built in accordance with JIS C 1502 condition. Operating sound level generally becomes higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- > The sound level at the air discharge port is about 8dB higher than the unit's operating sound.
- > Air flow rate can be changed over to Low mode or High mode.
- > Normal amplitude, input, efficiency depend on the other above conditions





## OPTIONS

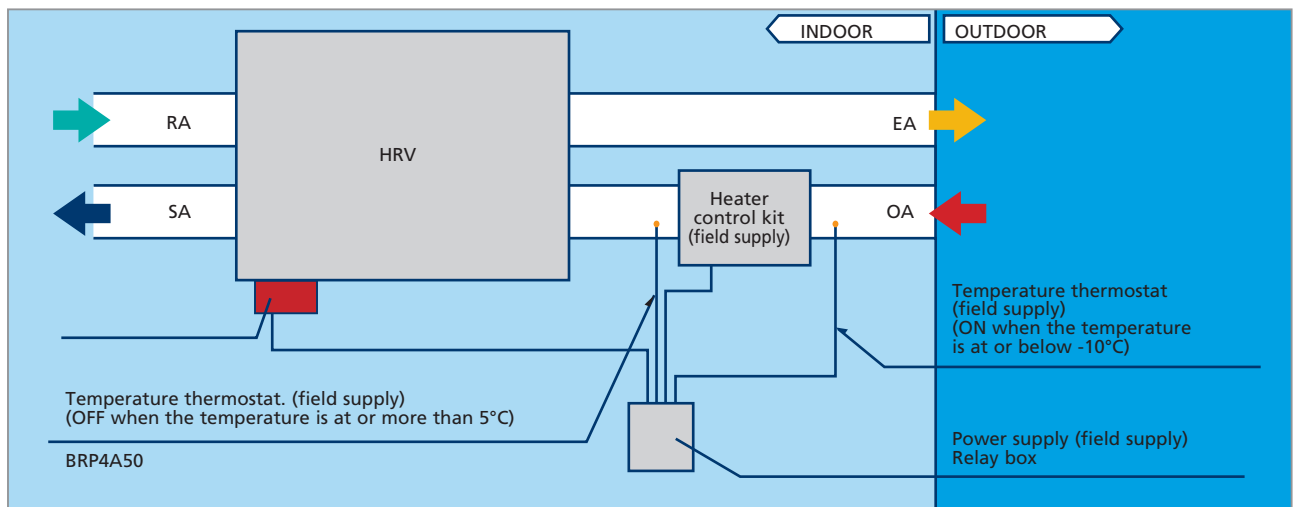


PC board adapter		wiring adapter for electrical appendices		KRP2A61							
		for humidifier (running ON signal output)		KRP50-2							
		for heater control kit		BRP4A50							
for wiring	indoor unit	FXZQ	FXFQ	FXCQ	FXKQ	FXMQ	FXSQ	FXDQ-N	FXHQ	FXAQ	FXLQ/FXNQ
	reference	KRP1B57*	-	KRP1B61*	-	KRP1D61	-	KRP1B56	KRP1B3	-	KRP1B61
installation box for adapter PCB		KRP1B101	KRP1H98*	KRP1B96	-	-	KRP4A91	KRP1B101	KRP1C93	KRP4A93	-
		*1/*4	*2/*3	*2/*3	-	-	*5	*1/*4	*3	*2/*3	-

### Notes

1. Installation box is necessary for each adapter marked with \*
2. Up to 2 adapters can be fixed per installation box
3. Only 1 installation box can be installed per indoor unit
4. Up to 2 installation boxes can be installed per indoor unit
5. Installation box is necessary for second adapter

When the installation of an electric heater is required in a cold region, this adapter with an internal timer function eliminates the complicated timer connecting work necessary with conventional heaters.



Notes when installing:

- › Examine fully installation location and specification for using the electric heater based on the standards and regulations of each country.
- › Supply the electric heater and safety production devices (such as a relay and a thermostat etc) which meet the on site standards and regulations of each country.
- › Use a non-flammable connecting duct to the electric heater. Be sure to allow 2m or more between the electric heater and HRV for safety.
- › For the HRV units, use a different power supply from that of the electric heater and install a circuit breaker for each of them.





Silencer



Duct adapter

Description	VAM150FA	VAM250FA	VAM350FA
High efficiency filter	YAFM323F15	YAFM323F25	YAFM323F35
Replacement for air filter	YAFF323F15	YAFF323F25	YAFF323F35

Description	VAM500FA	VAM650FA	VAM800FA
Silencer	reference	KDDM24A100	
	nom. piping diameter	Ø 200mm	Ø 250mm
High efficiency filter	YAFM323F50	YAFM323F65	
Replacement for air filter	YAFF323F50	YAFF323F65	

Description	VAM1000FA	VAM1500FA	VAM2000FA
Silencer	reference	KDDM24A100	
	nom. piping diameter	Ø 250mm	
High efficiency filter	YAFM323F100	YAFM323F65 x 2	YAFM323F100 x 2
Replacement for air filter	YAFF323F100	YAFF323F65 x 2	YAFF323F100 x 2
Duct adapter	reference	YDFA25A1	
	nom. piping diameter	Ø 250mm	

Description	VKM50GA(M)	VKM80GA(M)	VKM100GA(M)
Silencer	reference	KDDM24B100	
	nom. piping diameter	Ø 250mm	
High efficiency filter	KAF241G80M	KAF241G100M	
Replacement for air filter	KAF242G80M	KAF242G100M	







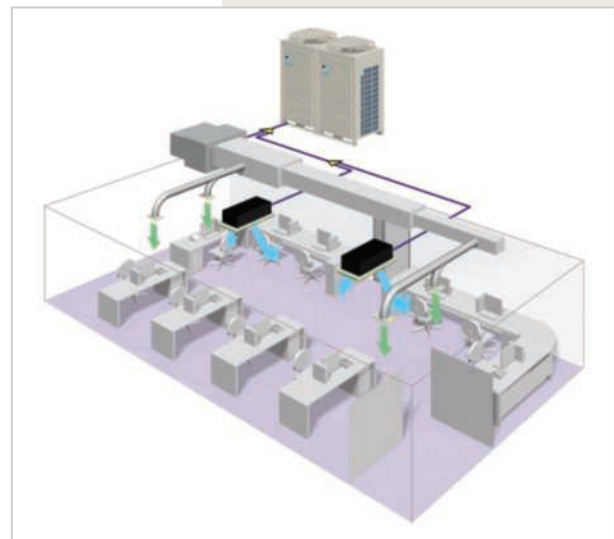


# FXMQ-MFV1 OUTDOOR AIR PROCESSING UNIT

## FEATURES

### Combined fresh air treatment and air conditioning via a single system.

Both fresh air treatment and air conditioning can be achieved successfully in a single system via heat pump technology without the usual design problems associated with balancing air supply and discharge. Air conditioning fan coil units and an outdoor air treatment unit can be connected to the same refrigerant line, resulting in enhanced design flexibility and a significant reduction in total system costs.



### Line-up



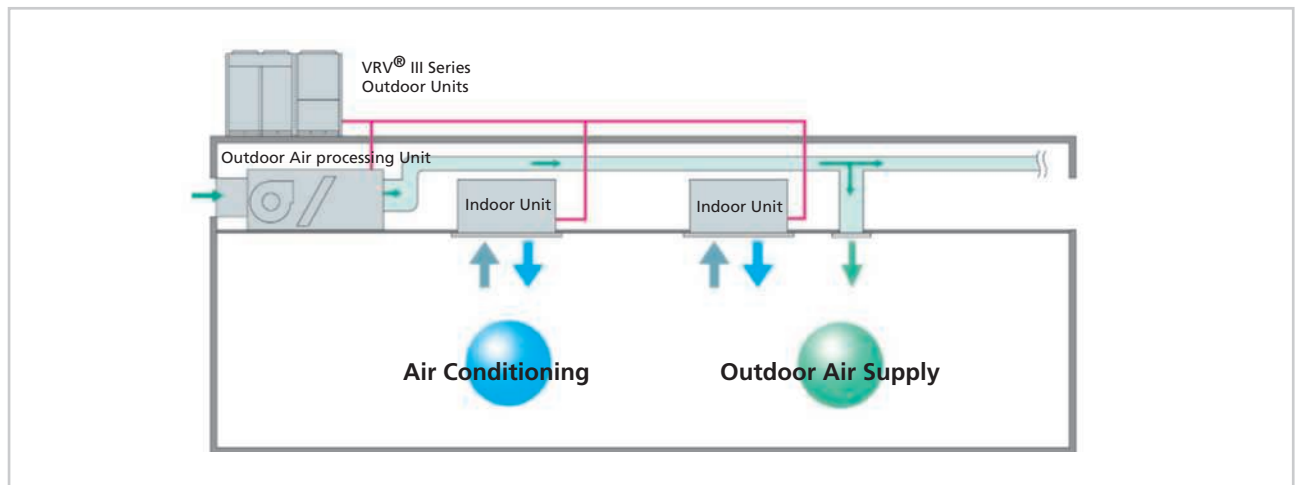
Air flow rate (m³/h)	1,080	1,680	2,100
FXMQ125MFV1	X		
FXMQ200MFV1		X	
FXMQ250MFV1			X

## 1. AIR CONDITIONING AND FRESH AIR TREATMENT CAN BE ACCOMPLISHED VIA A SINGLE SYSTEM.

### › Connection Conditions

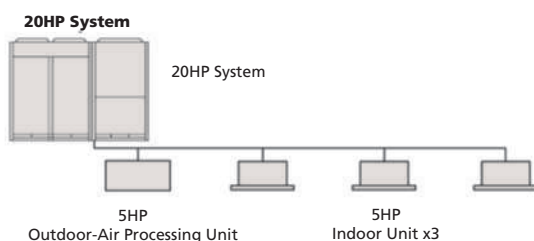
The following restrictions must be observed in order to maintain the indoor units' connection to the same system.

- › The total connected capacity of the standard indoor units and fresh air treatment units must be between 50% and 100% of the capacity of the air conditioning outdoor units. The connected capacity of the fresh air treatment units must not exceed 30% of the capacity of the air conditioning outdoor units.
- › A fresh air treatment unit can also be used exclusively. The connected capacity of the fresh air treatment unit must be between 50% and 100% of the capacity of the air conditioning outdoor unit.
- › Connectable outdoor units: VRV® and systems.



### › System Example

Check that system connected capacity is within the appropriate range.



- › Total connected capacity of standard indoor units and fresh air treatment unit does not exceed 100%.
- › System capacity of 20 HP = indoor unit capacity of 20 HP.
- › Connected capacity of fresh air treatment unit does not exceed 30% of this.
- › Since system capacity of 20 HP  $\times$  0.3 = 6 HP > fresh air treatment unit capacity = 5 HP.

## 2. 100% FRESH AIR INTAKE POSSIBLE

By introducing outdoor air into the room and adjusting the outdoor air temperature via fixed discharge temperature control, the system reduces the load on the air conditioner.

# SPECIFICATIONS

## FXMQ-MFV1

Ventilation



FXMQ200-250MFV1

					FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
Capacity	cooling		kW		14.0	22.4	28.00
	heating		kW		8.9	13.9	17.40
Power Input	cooling		kW		0.359	0.548	0.638
	heating		kW		0.359	0.548	0.638
Casing	material				Galvanised steel	Galvanised steel	Galvanised steel
Dimensions	unit	height	mm		470	470	470
		width	mm		744	1380	1380
		depth	mm		1100	1100	1100
Weight	unit		kg		86	123	123
Heat Exchanger	dimensions	nr of rows			3	3	3
		fin pitch		mm	2.00	2.00	2.00
		face area		m²	0.28	0.65	0.65
		nr of stages			26	26	26
	fin	fin type			Cross fin coil	Cross fin coil	Cross fin coil
Fan	type				Sirocco fan	Sirocco fan	Sirocco fan
	air flow rate	cooling	medium	m³/min	18.0	28.0	35.0
		heating	medium	m³/min	18.0	28.0	35.0
	external static pressure	standard		Pa	185	225	205
	motor	model			D13/4G2DA1	D13/4G2DA1	D13/4G2DA1
		output (high)		W	380	380	380
		drive			Direct drive	Direct drive	Direct drive
Piping connections	liquid (OD)	type			Flare connection	Flare connection	Flare connection
		diameter		mm	9.5	9.5	9.5
	gas	type			Flare connection	Brazing/Brazing connection	Brazing/Brazing connection
		diameter		mm	15.9	19.1	22.2
	drain	diameter		mm	PS1B	PS1B	PS1B
	heat insulation				Glass fiber	Glass fiber	Glass fiber
Air Filter					As option	As option	As option
Refrigerant control					Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Temperature control					Microprocessor thermostat for cooling and heating	Microprocessor thermostat for cooling and heating	Microprocessor thermostat for cooling and heating
Safety devices					Fuse	Fuse	Fuse
Safety devices					Fan motor thermal protector	Fan motor thermal protector	Fan motor thermal protector
Power Supply	frequency		Hz		50	50	50
	voltage		V		220-240	220-240	220-240
Current	minimum circuit amps (MCA)		A		1.90	3.30	3.80
	maximum fuse amps (MFA)		A		15	15	15
	full load amps (FLA)		A		1.50	2.60	3.00
Voltage range	minimum		V		-10%	-10%	-10%
	maximum		V		10%	10%	10%

### Notes:

- › Nominal cooling capacities are based on : outdoor temperature : 33°CDB, 28°CWB (68%RH), discharge set temperature : 18°CDB, equivalent piping length 7.5m (horizontal)
- › Nominal heating capacities are based on : outdoor temperature : 0°CDB, -2.9°CWB (50%RH), discharge set temperature : 25°CDB, equivalent piping length 7.5m (horizontal)
- › Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- › Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method(gravity method) 50% or more.
- › Voltage range : units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- › Maximum allowable voltage range variation between phases is 2%.
- › MCA/MFA : MCA = 1.25 x FLA
- › MFA <= 4 x FLA
- › Next lower standard fuse rating minimum 15A
- › Select wire size based on the MCA
- › Instead of a fuse, use a circuit breaker



# OPTIONS

Description			FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
Filters	Long-life replacement filter		KAFJ371L140	KAFJ371L280	
	High-efficiency filter	65%	KAFJ372L140	KAFJ372L280	
		90%	KAFJ373L140	KAFJ373L280	
Filter chamber *1			KDJ3705L140	KDJ3705L280	
Drain pump kit			KDU30L250VE		
Adapter for wiring			KRP1B61		

Notes :

\*1 Filter chamber has a suction-type flange. (Main unit does not).

Dimensions and weight of the equipment may vary depending on the options used.

Some options may not be usable due to the equipment installation conditions. Please confirm prior to ordering.

Some options may not be used in combination.

Operating sound may increase somewhat depending on the options used.





# CONTROL SYSTEMS

HRV / FXMQ-MFV1 can also be connected to

**DS-net**

**Intelligent Touch Controller**

**Intelligent Manager**

**BACnet Gateway**

**MS-IF**

Operation of the air conditioner using the remote control is interlocked with HRV operation, greatly simplifying overall system control. The same remote control centralizes air conditioning and ventilation operations, obviating any need for ventilation remote control installation work. Using a centralized remote control also frees the user to choose from a wide range of control systems that integrate air conditioning and ventilation. By incorporating a variety of centralized control equipment, the user can build a large, high grade centralized control system.

## 1. "SUPER WIRING" SYSTEM

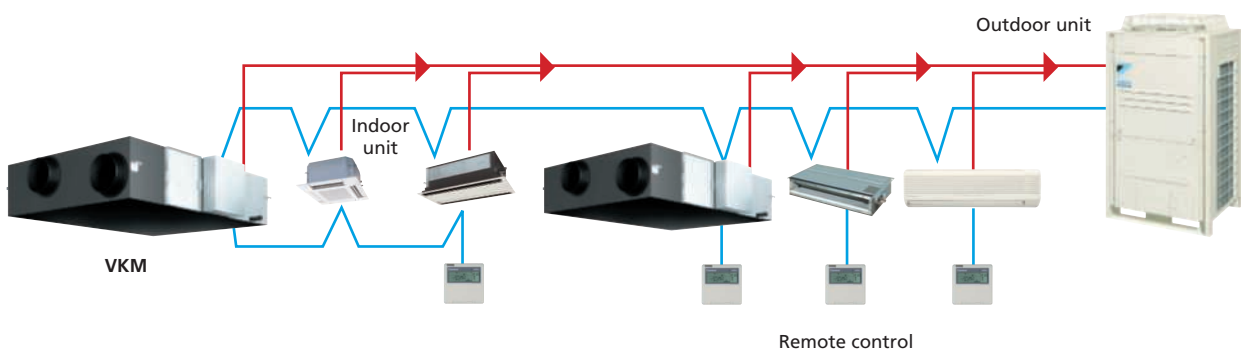
A Super Wiring system is used to enable the shared use of wiring between indoor units, outdoor units and the centralised remote control.

This system makes it easy for the user to retrofit the existing system with a centralised remote control, simply by connecting it to the outdoor units.

Thanks to a non polarity wiring system, incorrect connections become impossible and installation time is reduced.

Note:

Linked control of FXMQ-MFV1 and HRV is not supported.



5 individual control systems give the user control over the VRV® system and the combined ventilation.

BRC1D52 is a wired remote controller giving access to room temperature settings, schedule timer, ... Next to that it also has got user friendly HRV functions.

BRC301B61 is a wired controller especially designed for VAM units.

BRC2C51 and BRC3A61 are compact, easy to use remote controllers, ideal for use in hotel bedrooms.

The BRC4\*/BRC7\* infrared remote controllers combine the comfort of an infrared controller with the possibilities of a wired remote controller.

Description	HRV	FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
VAM remote control	BRC301B61	—	—	—
Air conditioner remote control / Operation remote control	BRC1D52			
Centralised remote control	DCS302C51			
Unified on/off control	DCS301B51			
Schedule timer	DST301B51			
Wiring adapter for electrical appendices (1)	KRP2A61			
Wiring adapter for electrical appendices (2)	—	KRP4A51		



VAM remote control



Air conditioner remote control



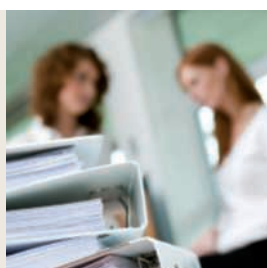
Centralised remote control



Unified ON/OFF control



Schedule timer



## 2. INDIVIDUAL CONTROL SYSTEMS

- › Simultaneous ON/OFF of HRV and air conditioner (BRC1D52)
- › Airflow rate switching (initial setting)
- › Ventilation mode switching (initial setting)
- › Self diagnostic functions
- › Filter sign display and reset
- › Timer settings, simultaneous control with air conditioner (BRC1D52)
- › ON/OFF of VAM (BRC301B61)
- › Independent operation of HRV
- › Timer settings (BRC301B61)
- › Fresh-up mode switching ( HRV only)  
(Selectable: supply rich mode, exhaust rich mode; initial setting)

### Notes:

- › The remote control wired to the FXMQ-MFV1 cannot be set as master remote control. Otherwise, when set to 'auto', the operation mode will switch according to outdoor air conditions, regardless of indoor temperature.

### BRC1D52

air conditioner remote control



### BRC301B61

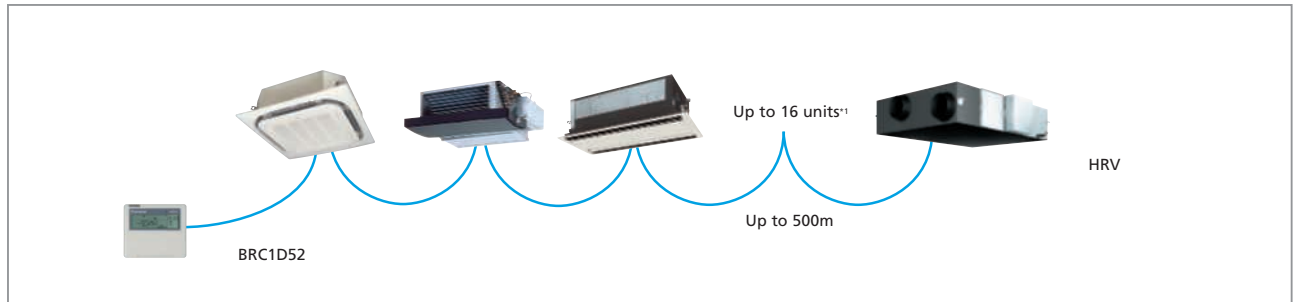
VAM remote control



## A variety of control systems can be controlled using only the BRC1D52 ( HRV only)

### › Group Control

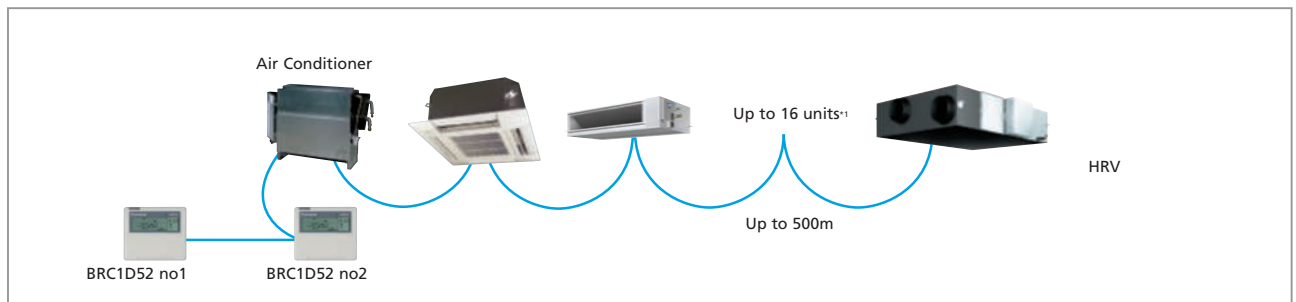
One air conditioner remote control simultaneously controls up to 16 air conditioning and HRV units.



\*1: Count VKM unit as two air conditioners. For details, see Table 1 on page 15.

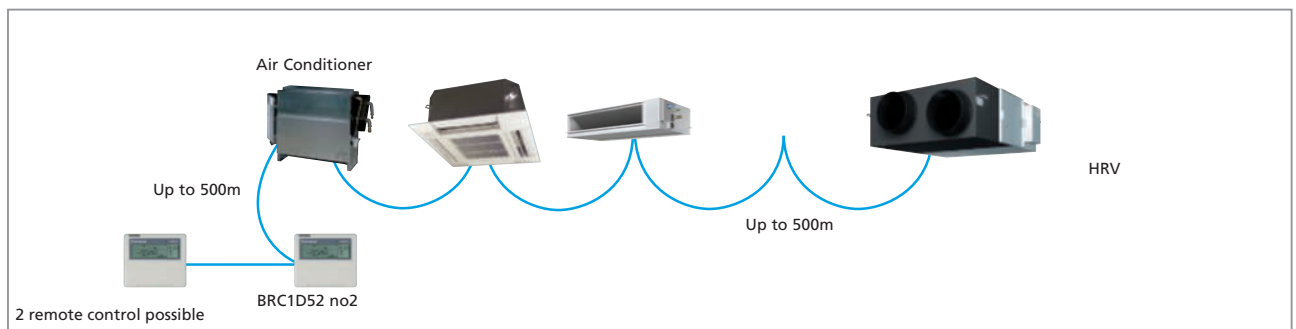
### › Control using 2 remote controls

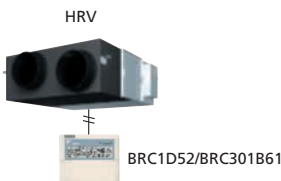
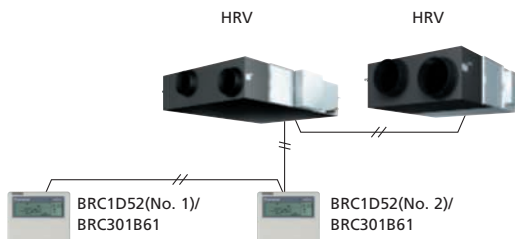
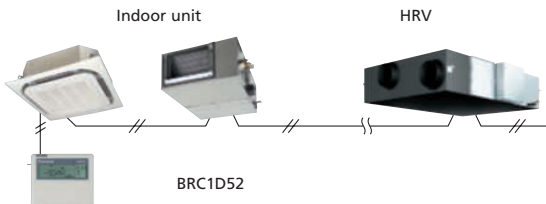
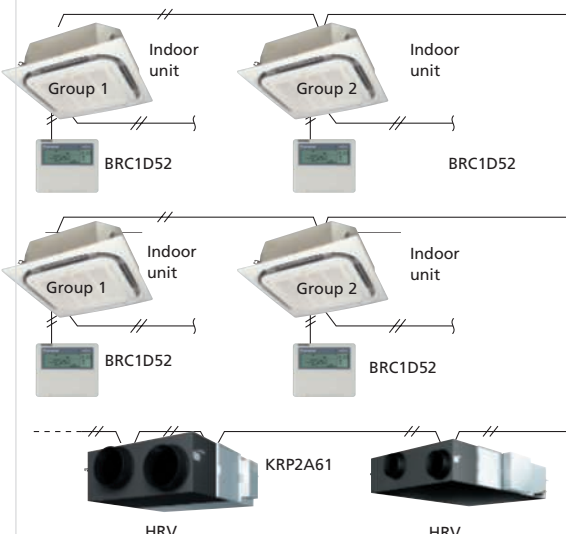
Allows control of air conditioning and HRV units from two locations by connecting two air conditioner remote controls. (group control is possible)



### › Long-distance Remote Control

Remote operation control - from a distant control room for example, is possible thanks to wiring of up to 500 m. (2 remote control control possible)



SYSTEM CONSTRUCTION (HRV only)			SYSTEM CHARACTERISTICS	NECESSARY ACCESSORIES																				
INDEPENDENT OPERATION SYSTEM	INDEPENDENT OPERATION		<ul style="list-style-type: none"><li>Independent operation of HRV is possible</li><li>Air conditioner remote control can be used</li></ul>	BRC1D52 BRC301B61																				
	SIMULTANEOUS OPERATION OF MULTIPLE UNITS		<ul style="list-style-type: none"><li>Operation is possible using 2 remote controls</li><li>Multiple HRV units can be simultaneously controlled in batch. (Up to 8 HRV units can be connected)</li></ul>	BRC1D52 BRC301B61																				
AIR CONDITIONING INTERLOCKED CONTROL (VRV®, SKY AIR) SYSTEM	STANDARD SYSTEM	 <p>During group control operation, the VKM unit has a capacity equivalent to 2 standard indoor units. Up to 16 standard indoor units can be connected at the same time.</p> <p>Connectable indoor units:</p> <table><tr><td>VKM</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>Max. n° of VRV®</td><td>16</td><td>14</td><td>12</td><td>10</td><td>8</td><td>6</td><td>4</td><td>2</td><td>0</td></tr></table> <p>Note: The VKM uses 2 remote control addresses per unit. The number of units that can be group controlled is shown above.</p>	VKM	0	1	2	3	4	5	6	7	8	Max. n° of VRV®	16	14	12	10	8	6	4	2	0	<ul style="list-style-type: none"><li>Multiple VRV® indoor units or HRV units can be connected and controlled in batches, with inter-locked operation of HRV and air conditioners by using the air conditioner remote control.</li><li>The HRV unit can also be operated independently using the remote control for the indoor unit, even if the indoor unit is not in operation</li></ul>	BRC1D52
	VKM	0	1	2	3	4	5	6	7	8														
Max. n° of VRV®	16	14	12	10	8	6	4	2	0															
MULTIPLE GROUPS INTERLOCKED OPERATION SYSTEM		<ul style="list-style-type: none"><li>Can control interlocked operation of multiple groups of VRV® or Sky Air indoor units</li><li>When one of the multiple groups operates, HRV units are interlocked and operate simultaneously</li></ul>	BRC1D52																					

BRC301B61 only available for VAM-FA



**Note:**

- › Group control is not possible between FXMQ-MFV1 and standard type indoor units. Connect remote controllers to each unit.
- › Not all FXMQ-MFV1 functions are available when using centralised control. Please refer to your local installer for detailed information.
- › The remote control wired to the FXMQ-MFV1 cannot be set as master remote control. Otherwise, when set to 'auto', the operation mode will switch according to outdoor air conditions, regardless of indoor temperature.
- › Temperature setting and PPD are not possible, even when Intelligent Touch Controller or Intelligent Manager are installed.

## DCS302C51



## DCS301B51



## DST301B51



### 3. CENTRALISED CONTROL SYSTEMS

By combining the (optional) centralised control equipment listed below, the user can achieve a wide range of comprehensive centralised control systems for air conditioning and ventilation.

#### Centralised remote control - DCS302C51

- › A maximum of 64 groups (128 indoor units, max. 10 outdoor units) can be controlled
- › A maximum of 128 groups (128 indoor units, max. 10 outdoor units) can be controlled via 2 centralised remote controls in separate locations
- › Group control (up and down buttons are added for group selection)
- › Zone control
- › Malfunction code display
- › Max. wiring length 1,000 m (total : 2,000 m)
- › Combination with unified ON/OFF control, schedule timer and BMS system
- › Airflow volume and direction can be controlled individually for indoor units in each group operation.
- › Ventilation volume and mode can be controlled for Heat Reclaim Ventilation (VKM).
- › Up to 4 'operation/stop' pairs can be set per day by connecting a schedule timer.

#### Unified ON/OFF control - DCS301B51

Enabling 64 groups to be programmed

- › One unit can turn ON/OFF up to 16 groups (128 units) of HRV and air conditioner units individually or in a batch.
- › Lamps display operation and failure status of the connected HRV and air conditioner units.
- › 2 remote controls in separate locations can be used
- › centralised control indication
- › Maximum wiring length of 1,000m (total: 2,000m)

#### Schedule timer - DST301B51

- › One unit can control the operation of up to 128 HRV and air conditioner units on a weekly schedule.
- › Can set two ON/OFF operations per day for a period of one week.
- › 8 types of weekly schedule
- › A maximum of 48 hours back-up power supply
- › Maximum wiring length of 1,000m (total: 2,000m)

#### Number of HRV units that can be connected per system

Centralised remote control	2 units
Unified on/off control	8 units
Schedule timer	1 unit

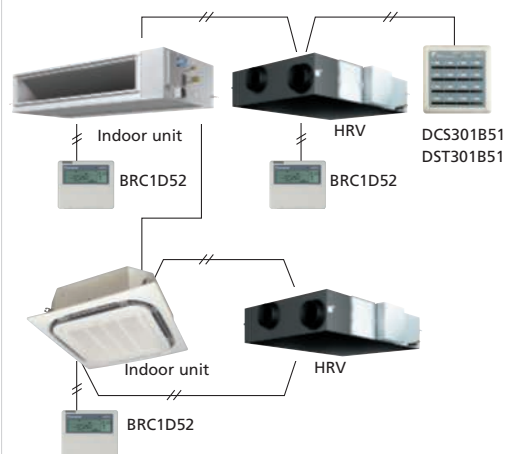
## SYSTEM CONSTRUCTION (HRV only)

## SYSTEM CHARACTERISTICS

## NECESSARY ACCESSORIES

## AIR CONDITIONING INTERLOCKED CENTRALISED CONTROL SYSTEM

## BATCH / INDIVIDUAL CONTROL SYSTEM


**Unified ON/OFF control - DCS301B51**

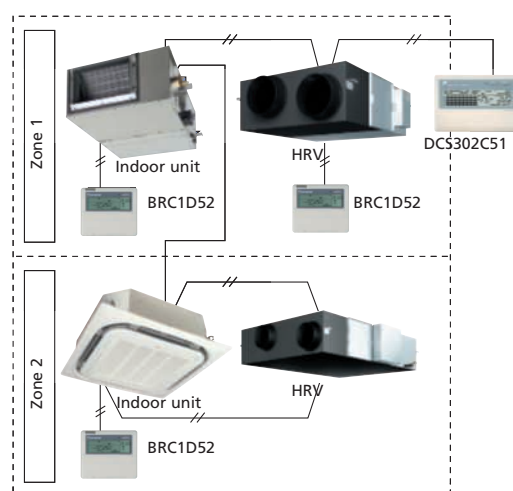
- › One control can control the on/off operation of 16 groups of units collectively or individually
- › Up to 8 controls can be installed in one centralised transmission line (in one system), which enables control of up to 128 groups. (16 groups x 8 = 128 groups)

**Schedule timer - DST301B51**

- › One schedule timer can control the weekly schedule of up to 128 units
- › HRV remote control can set the individual operation of each HRV unit
- › Control system can be expanded depending on its purposes by combining a variety of centralised control equipment

DCS301B51  
or  
DST301B51,  
BRC1D52  
If necessary:  
DCS302C51

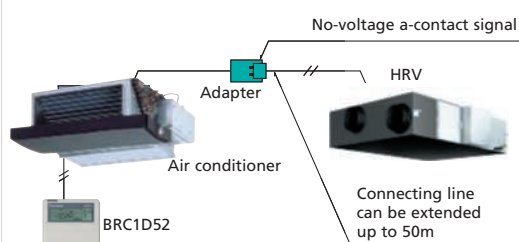
## ZONE CONTROL SYSTEM


**Centralised remote control - DCS302C51**

- › The centralised remote control provides settings and monitoring functions and can control up to 128 VRV® and HRV units. A special adapter is required to connect Sky Air to the centralised line.
- › Control is possible in 3 different patterns: individual, batch or zone
- › Multiple groups can be controlled within the same zone
- › Multiple HRV units can be operated independently
- › System without air conditioning or HRV remote controls can be constructed
- › Control system can be expanded depending on requirements by combining a variety of centralised control systems

DCS302C51,  
BRC1D52  
If necessary:  
301B51,  
DST301B51

## COMBINATION WITH OTHER TYPES OF AIR CONDITIONERS



- › Simultaneous operation of HRVs and air conditioners is possible via BRC1D52
- › Use of the HRV remote control enables to change settings or operate HRVs independently

Connection adapter (no-voltage-a-contact-signal)



# VRV®+EXV-KIT

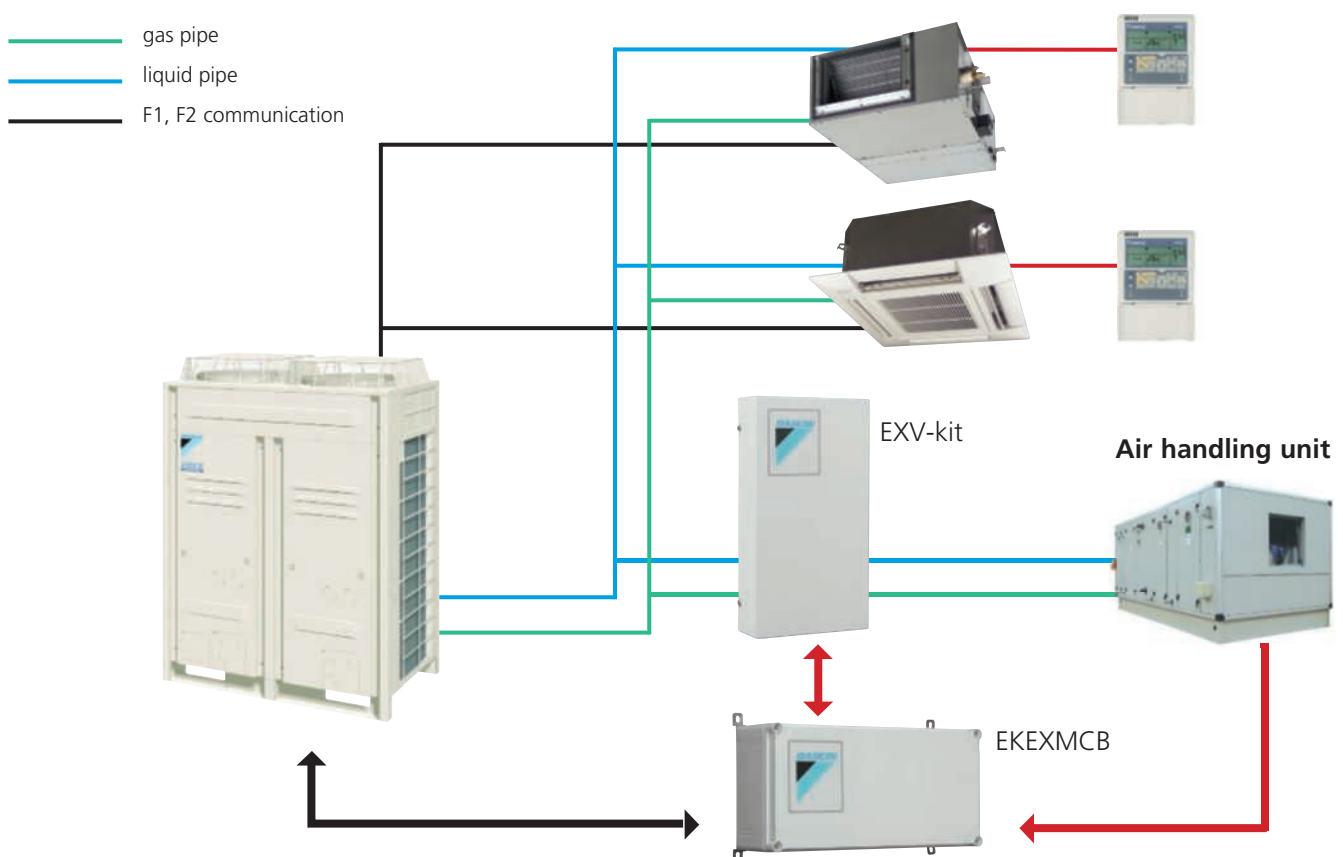
## VRV® AIR HANDLING APPLICATION

### FEATURES

Daikin has introduced a new range of R-410A inverter condensing units to provide ventilation and air conditioning for air handling installations in medium and large commercial spaces. This system is unique because it combines the flexibility of Daikin VRV® units with Air Handling Applications. Because of the simplicity of the system, it is very easy to design the air conditioning system.

#### 1. SYSTEM OVERVIEW

In order to maximise combination potential, Daikin offers different expansion kits and an own control system. BRC1D52 is used to set the set joint temperature (connected to the EKEXMCB)



## 2. LARGE RANGE OF EXPANSION VALVE KITS (EXV) POSSIBLE

	Capacity Class	Allowed Heat Exchanger Volume (dm³)			Allowed Heat Exchanger Capacity (Kw)		
		min		max	min	std	max
EKEXV	50	0.76	-	0.96	5.0	5.6	6.2
EKEXV	63	0.96	-	1.22	6.4	7.1	7.8
EKEXV	80	1.22	-	1.53	8.1	9.0	9.9
EKEXV	100	1.53	-	1.91	10.1	11.2	12.3
EKEXV	125	1.91	-	2.14	12.6	14.0	15.4
EKEXV	140	2.14	-	3.06	14.4	16.0	17.6
EKEXV	200	3.06	-	3.82	20.2	22.4	24.6
EKEXV	250	3.82	-	4.78	25.2	22.0	30.8

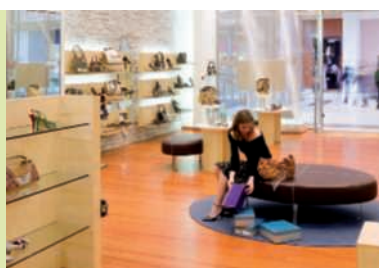
# SPECIFICATIONS

## 1. SYSTEM SPECIFICATIONS

## RXQ-P(A)

Cooling only

RXQ-P(A)				5	8	10	12	14	16	18
Capacity range		HP		5	8	10	12	14	16	18
Capacity	cooling	kw		14.0	22.4	28.0	33.5	40.0	45.0	49.0
Power input (Nominal)	cooling	kw		3.52	5.56	7.42	9.62	12.4	14.2	16.2
Dimensions	HxWxD	mm		1,680x635x765	1,680x930x765	1,680x930x765	1,680x930x765	1,680x1,240x765	1,680x1,240x765	1,680x1,240x765
Weight		kg		157	185	238	238	315	315	323
Sound Level	sound power	cooling	dBA	72	78	78	80	80	80	83
	sound pressure	cooling	dBA	54	57	58	60	60	60	63
Air Flow Rate (nominal at 230V)	cooling	m/min		95	171	185	196	233	233	239
Operation Range	cooling	min~max	°CDB	-5.0~43.0						
Refrigerant				R-410A						
Power Supply				3N~/400V/50Hz						
Max n° of indoor units to be connected				8	13	16	19	23	26	29
Piping connections	liquid (OD)/gas	mm		9.5 / 15.9	9.5 / 19.1	9.5 / 22.2	12.7 / 22.2	12.7 / 28.6	12.7 / 28.6	15.9 / 28.6





## 2. COMBINATION TABLE

Combination table

Outdoor unit		CONTROL BOX		EXPANSION VALVE KIT						
		CONTROL Z	CLASS 50	CLASS 63	CLASS 80	CLASS 100	CLASS 125	CLASS 140	CLASS 200	CLASS 250
		EKEXMCB	EKEXV50	EKEXV63	EKEXV80	EKEXV100	EKEXV125	EKEXV140	EKEXV200	EKEXV250
3ph	RXQ5P	x	x	x	x	x	x	x	x	x
	RXQ8P	x	x	x	x	x	x	x	x	x
	RXQ10P	x	x	x	x	x	x	x	x	x
	RXQ12P	x	x	x	x	x	x	x	x	x
	RXQ14PA	x	x	x	x	x	x	x	x	x
	RXQ16PA	x	x	x	x	x	x	x	x	x
	RXQ18PA	x	x	x	x	x	x	x	x	x

X = Quantity determined by connection ratio or maximum number of indoor units (the EKEXV-kit is considered as one of the indoor units)

## 3. EXPANSION VALVE KIT (EXV)



Expansion valve kit

Casing	colour	Ivory White		
Dimensions	unit	height	mm	401
	width	mm	215	
	depth	mm	78	
Weight	unit	kg	2.9	
Piping Connection	liquid	mm	9.52	
Sound Pressure Level	nominal	dB(A)	45 (max. at 10cm from motor)	
Operation Range	cooling	min	°CDB	-5.0
		max	°CDB	46.0

## 4. CONTROL BOX



Control box

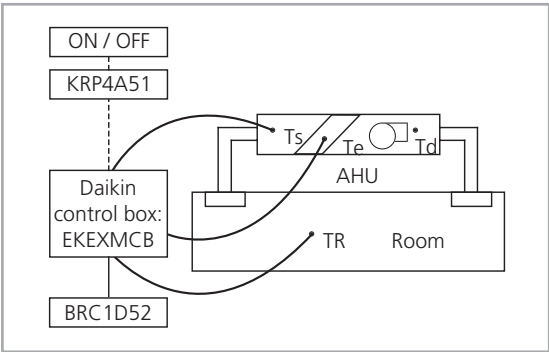
Casing	colour	White grey		
Dimensions	unit	height	mm	132
		width	mm	400
		depth	mm	200
Weight	unit	kg	3.5	
Operation Range	cooling	min	°CDB	-5.0
		max	°CDB	46.0
Power Supply	name			V3
	phase			1
	frequency		Hz	50
	voltage		V	230
	voltage range	minimum	V	-10%
		maximum	V	10%

Control box

Wiring connections	for power supply	quantity	3
		remark	Earth wire included
	for connection with indoor	quantity	2
		remark	F1-F2
	for remote control	quantity	2
		remark	P1,P2
	for expansion valve kit	quantity	6
		remark	Y1 ~ Y6
	thermistors liquid pipe	quantity	2
		remark	R1,R2
	thermistors gas pipe	quantity	2
		remark	R3,R4
	thermistor air	quantity	2
		remark	R5,R6
ON/OFF	remark	T1,T2	
Power Supply Intake			Bottom

# CONTROL SYSTEMS

## 1. CONTROL OF AIR TEMPERATURE VIA DAIKIN CONTROL



Set point can be fixed via standard Daikin wired remote controller. Remote ON/OFF can be achieved by an optional adapter KRP4A51. No external DDC controller should be connected. BRC 1D52 is used to set the set point temperature (connected to the EKEXMCB).

Caution: Do not connect the system to DIII-net devices (Intelligent Controller, Intelligent Manager, DMS-IF, BACnet Gateway ...) This could result in a malfunction or breakdown of the total system.

# OPTIONS

EKEXMCB	
Wired remote control	BRC1D52
Wiring adapter for electrical appendices	KRP4A51
Valve kits	EKEXV 50, 63, 80, 100, 125, 140, 200, 250

Caution: Only use this system in combination with a field supplied air handling unit. Do not connect this system to other indoor units.

## NOTES



In all of us,  
a green heart



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues.

For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment.

This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.



ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

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Daikin units comply with the European regulations that guarantee the safety of the product.

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